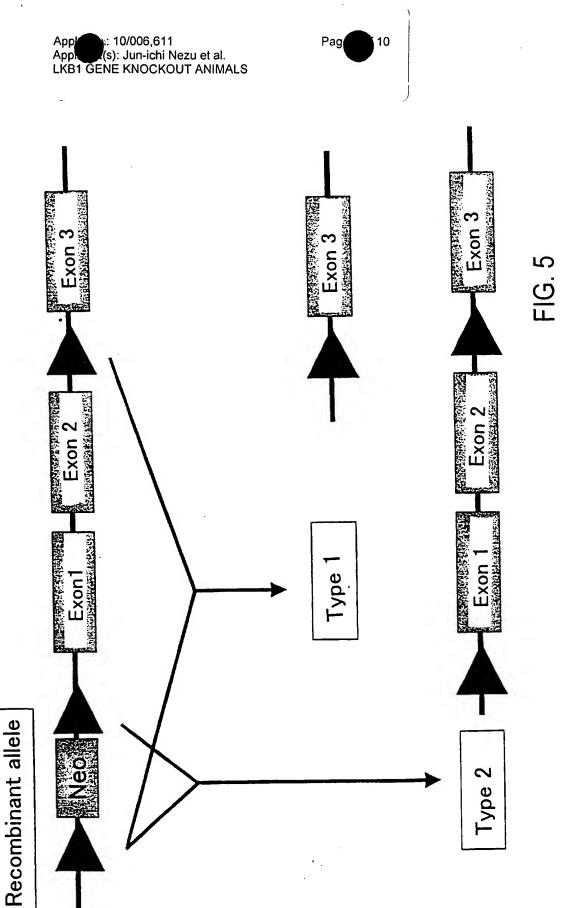


GGAGATCCAGCTGCTGCGGCGGCTGCGGCATCGGAATGTGATCCAGCTTGTGGACGTGCTGTACAATGAGGAGAAGCAGA AGATatatcctgtgggtggagtgggctggggtggcccctgtgttaggggctggaagccttctgcaaggcctctggcagca cctgttctgagcagtgtgggttgggactgggcatggcctcacagggacttggggcctatgtacattgacagggccccggct ggttctagaggtttccatgctgccccttcccagaggtagaggttgcacagcctacgttgcatctgggcagtcctgggagc $attot {\tt gagaacccag} t {\tt gccctgcagccccaactcctg} t {\tt gccagctgattcagt}$ cctgttgtaatctatgctgactccatgtggtccaagtcactgtggtggtcttgtggaccctgtgagtactgatagggagc gcagaatggcgggagagcagagtggtggtggtctgttggcccagcggggccctccagaccactgttgctaggagcagggc tcctgggcttggtgtgctgctttccttagcgccctacGTATATGGTGATGGAGTACTGCGTATGTGGCATGCAGGAGATG CTGGACAGTGTGCCGGAGAAGCGCTTCCCTGTGTGCCAAGCTCATGGgtgagtgccctgctgggtgcaggaggagcagcc ${\tt attgtcaggaaacccaggtgtttctgggcccccagtttttaacccagccaatgtgcttagggttaccctcttgttaggcc}$ ctgtggtcccgctgccctgcagagccatagtgggtctgagtcctgttcagtgctcccaggttcagcagaatcacatcccc tgactgccagttgccctgtgtaattttagtggcccagccttctgactctcaggtctgtttgcctgagccctaaacatcta tcaccttgtaggccaggtctcatgagtctcccaaacttcatatcagacttatgtaggtaccatggtatgggctgagacac ATTGTTCACAAGGACATCAAGCCGGGCAACCTGCTACTCACCACCAATGGCACACTCAAGATCTCCGACCTCGGTGTTGC CGAG gtaggcaccatgtgcagggatcatgggccgcttctcctgagctgccctgactctcactgccctgcagGCCCTGCACCCTTTCGCTGTGGATGACACCTGCCGGACAAGCCAGGGCTCCCCGGCCTTCCAGCCTCCTGAGATTGCCAATGGACTGGA CACCTTTTCAGGTTTCAAGGTGGACATCTGGTCAGCTGGGGTCACACTgtaagtgtcttgtgtgtaccctgtagcagatg gggggctgtgggttttccctagtgttcttgggcctttttgcccacagtgtgtggctagcaggttggacattccaggtctg ctaccagttaacatgtgtcctgtctgggagttggggcacctgtcctctggtctccagtgtggccagcactgacactcttt tcctatgtgaagTTACAACATCACCACGGGCCTGTACCCATTTGAGGGGGGACAATATCTACAAGCTCTTTGAGAACATTG GGAGAGGGAGACTTCACCATCCCTTGTGACTGCGGCCCACCACTCTCTGACCTACTCCGAGgtgggcatctctaaatcacc camatgttaggacagcaagggacagagcccctggtctggaggggttctgaccttactgtcaggacagcctttgtccgcca cagGGATGTTGGAGTATGAGCCGGCCAAGAGGTTCTCCATCCGACAGATTAGGCAGCACAGgtgagcatggccggcctgt ctcagcctgctgggggtctgagctgagaacatggtctcagaggtgctaggtcatcacaggagtaaggatcagtgtgctgt gtgtattgatgtctgggaaggctgtgtgtgaacttggggtgtgacaggggtgcccaatgcaggcctccctacctttatca ttttgttcaggagtgcaggcgttatgtggcctgagaagctgtagatttcagggcctagaattagagacggatcctcccat ggtggggaggaggagtagatggggaagtgtcactttggatcccagctgttccttggccatctggacatggaaatgtgtc



tagggaggccaacaggaagcgtgaggcatggtgtctttcctcacctgaggctaagagccttctgggtaacagtggagcct $\verb|ctgtcctccctttgtttatttaccagctggtcagagcctttgggtccaggcttctctgtcctcttctcccttcatgctag|$ actgagactggctcagctgggtgtcccccagtgagggcttctagcctatccgtgttcaaggcgggtgggactataggtgc ttggccagccgtggtcacagtgcctggcacctgatgtctgtgctgcacttggccttctttagCTGGTTCCGGAAGAAACA CCCTCTGGCTGAGGCGCTCGTACCTATCCCACCAAGCCCAGACACTAAGGACCGCTGGCGCAGTATGACTGTAGTGCCCT ACCTGGAGGACCTGCATGGCCGTGCGGAGGAGGAGGAGGAGGAAGACTTGTTTGACATTGAGGACGGCATTATCTACACC ${\tt CAGGACTTCACAGTGCCTGgtaagctggcttggcgcagctcctactggagctggtgactttgtgcactctggggctggtc}$ $\verb|cccttcccaagtctccagccagetaacatgagccaccaggactgccaaagccatcctggtggctgtggcatttcactctg|$ ggctagatgaagggctccctggctgcatctagcaggaggagggaaccctggagggcagtgggtaggggccctgagacag $\verb|ccacctgagggagggtccagtggccttggccatgcctgaccttatatcgccttcttccccaggtgtcgaggag| \\$ tgtctgcaggtggatgcttgccgcgacttccctcctgtcactaccctgacaggctccccaccagggtttcagagaacatgcctgcatgccagtcccacttagctcctggcctttcaaatagctttggtgggagggtaaggaccttgggctactgtgtctc ctgtagcaattgagagttctaatagcagtgcccgctgggtgccaggtggaatccacaaggacaggtatacacctgatgtc cagtatgggccttggccacagccctttctaaggtttaaagcatccctatgtgggaatagtgtcttctactctgtcacgtg gagcccttgtctagactgtcccacaggctgggctcctggctgagagctggtttctctgctggggagaagatgtacttagg cccatttgtcaaatggggtagtgttgcacagagtgaagtgaccgtgctctgaggatagcctgatccctctgtacttggca tgagggtcggactctgcagcaacaggacaggggctttctactcagtgccttgtgtggaggaggggacagatgctttctcagagtccacctgacctcaagcctcagtcccatgcagagtgagccagagtgggtgctgctagtgtggccaagtcagagggtt tgtggagttacatgtagacactgacctctggagcctgggaagcttcaggagaggccatcttttgtcccactgcgagggca ggccaacagagcaagctggtctgcagccctcagctggatgatctccttcccggtgctcatcgcagctagtagctcccagg ccgaatgcttcatctccttgtgcctgtactgagggtctagagcctctcccttggagagctctgtgagctggtgctgggct gcccaggctagacaggcaggtgagcgtgggcatgctgcaggagggccagggcatagcactgtgaaggcagtgggcctgct tgggccctggggctttgagctacctgccccttggctcaagctatgcttgccatcttcccgtagGACAGGTCCTGGAAGAGGAAGTGGGTCAGAATGGACAGAGCCACAGTTTGCCCAAGGCTGTTTGTGTGAATGGCACAGAGCCCCAGCTCAGCAGCAA GGTGAAGCCAGAAGGCCGACCTGGCACCCCCAACCCTGCGCGCAAGGTGTGCTCCAGCAACAAGATCCGCCGGCTCTCGG ${\tt CCTGCAAGCAGCAGTGACTGAGGCCTACAGgtgggcatgggcctgggtccagccatccctggtgttcacagtgggtgtct}$ $\tt gctgggctcctagctccttcccgtagggcagtgctgcaagggggaaggtctggtggttgaggtggtactaagtgaccacc$ FIG. 4



F23 synthetic linker

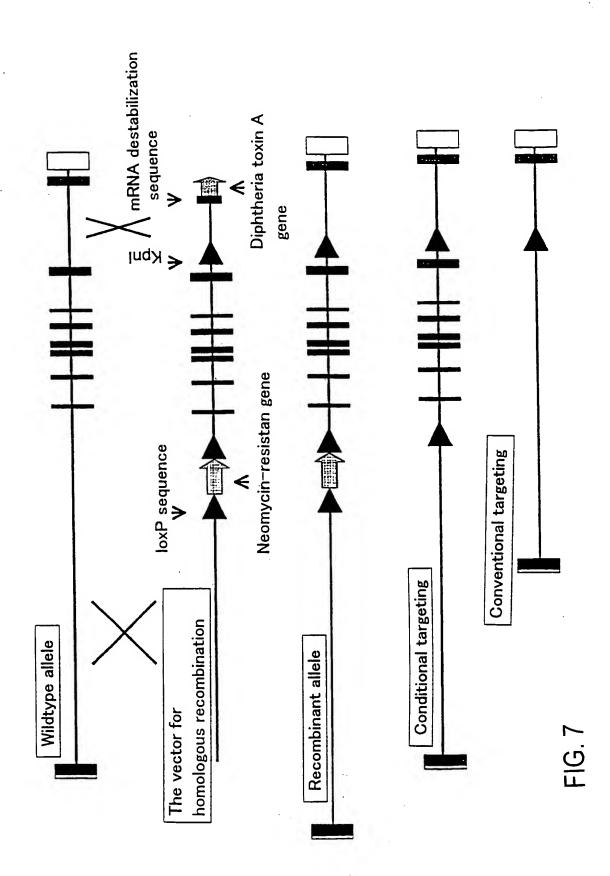
5' tgcgacacategataccgctegagteg 3'

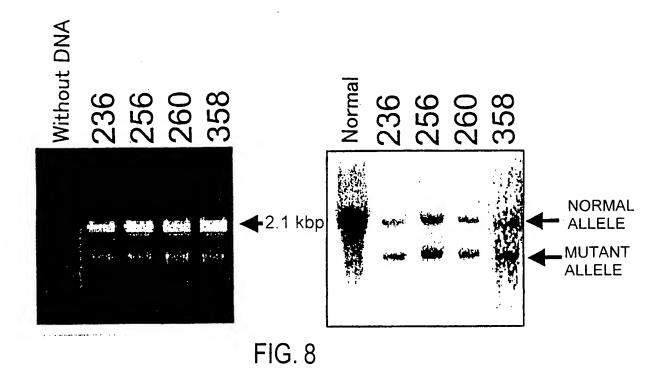
3. acgtacgctgtagctatggcgagctcagcttaa 5'

Avalli Clal Xhol EcoRl

loxP2 synthetic linker

	က်	ດ໌
XhoI	20:000	3
lindIII XhoI	tc	348
Hind	3 386	tce
_	tato	a tag
	aagt	ttca
	tacg	atgo
î	atta	teat
loxP ->	atac	tatg
	tage	atcg
	ceta	gcat
	actt	tgaa
	cata	gtat
Ħ	atcc	tagg
Bar	cting	gaçç
	ggac	ctg
Ecori	aatt	1188
啞	atce	tago
	agtt	teaa
	acga	tgat
^	ttat	aata
	taca	atgt
loxP	agga	tegt
	gtat	cata
	ت	gaag
	atea	tatt
1111	otto	gaag
Hind	C3.8.C	3
Spel HindIII	EREC	ः वर्ष
S	Ω	က





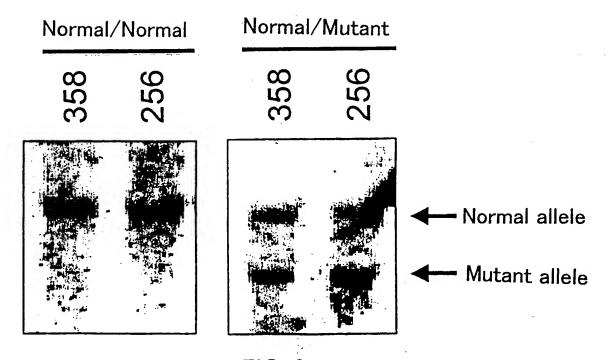
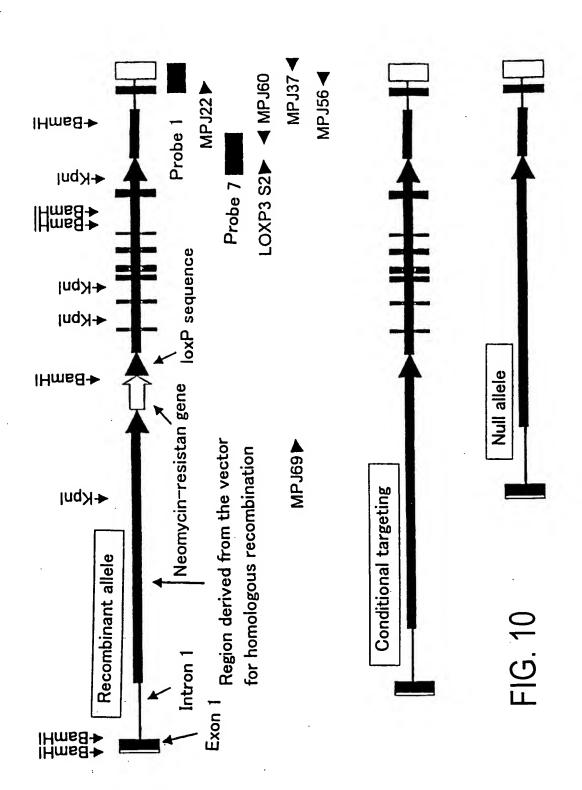


FIG. 9

No.: 10/006,611 Ament(s): Jun-ichi Nezu et al. LKB1 GENE KNOCKOUT ANIMALS





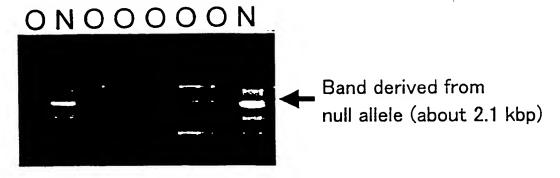
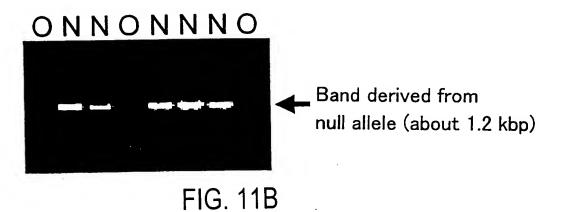


FIG. 11A



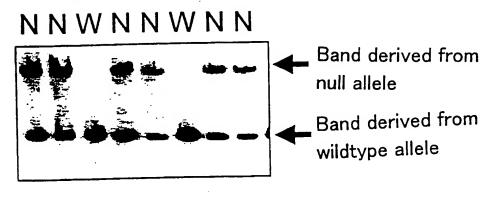


FIG. 11C